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# NASA Procedural Requirements

**COMPLIANCE IS MANDATORY****NPR 8705.6A**

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Request Notification of Change

 (NASA Only)**Subject: Safety and Mission Assurance Audits, Reviews, and Assessments****Responsible Office: Office of Safety and Mission Assurance**[| TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [Chapter4](#) | [AppendixA](#) | [AppendixB](#) | [ALL](#) |

## Chapter 4. Safety and Mission Success Review (SMSR)

### 4.1 Overview

4.1.1 The SMSR is a review held to prepare Agency safety and engineering management to participate in program final readiness reviews preceding flights or launches, including experimental/test launch vehicles, or other reviews as determined by the Chief, Safety and Mission Assurance. The SMSR provides the knowledge, visibility, and understanding necessary for senior safety and engineering management to either concur or nonconcur in program decisions to proceed with a launch.

4.1.2 SMSRs can be Headquarters-led or Center-led.

4.1.3 Headquarters-led SMSRs are conducted for any activity requiring Mission Directorate-level or higher level decision to proceed.

4.1.4 Center-led SMSRs are conducted for any activity requiring lower than a Mission Directorate-level decision to proceed. Center-led SMSRs are led by Center safety management as the delegated SMA Technical Authority.

4.1.5 The Chief, Safety and Mission Assurance or the Chief Engineer may request a SMSR (either Headquarters-led or Center-led) for other safety and mission success-critical program or project activities to assure all risks are mitigated to an acceptable level, including:

a. Test readiness reviews, designed certification reviews, indemnification cases, and extravehicular activities.

b. Reviews of tailoring or nonconformity of program/project SMA or engineering requirements which may affect mission success or facility operations.

4.1.6 A record of each Headquarters SMSR shall be prepared and maintained by the OSMA Review and Assessment Division for six years after mission completion (Requirement).

a. Review and affirm that assurance processes and requirements have been implemented over the life of the program, including review of the program/project-developed SMA assurance process map and matrix.

b. Verify compliance with the applicable baseline reporting set (BRS).

c. Provide adequate knowledge and visibility for senior safety and engineering managers to understand the managed risks associated with the safety and mission success of program launches, operational stages, or selected critical tests, utilizing input from cognizant program and Center-based safety and reliability review panels (e.g., ground safety, payload safety, range safety, facility safety).

d. Examine mission preparation status, open work issues, and concerns.

e. Assess overall systems readiness.

f. Provide an SMA and engineering position on whether to concur or nonconcur in proceeding with the event/operation being reviewed.

4.1.7 Data presented at the Headquarters-led SMSR is developed by the program, cognizant Headquarters and Center SMA and engineering organization(s), the NASA Safety Center (NSC) IPS Audits, PA&R audits and assessments, other independent assessment groups (e.g., NASA Engineering and Safety Center [NESC], NASA Independent Verification and Validation [IV&V] Facility, Center-based independent assessment organizations), applicable Safety Review Panels, and any individuals or organizations representing minority or dissenting opinions.

4.1.8 A record of each Headquarters and Center SMSR shall be prepared and maintained by the OSMA Mission Support Division for six years after mission completion (Requirement).

## 4.2 Roles and Responsibilities

4.2.1 The Chief, Safety and Mission Assurance shall:

- a. Co-chair each Headquarters-led SMSR (Requirement).
- b. Conduct a poll of selected SMSR participants at the conclusion of the Headquarters-led SMSR for a recommendation to proceed (Requirement).

4.2.2 The Chief Engineer shall co-chair each Headquarters-led SMSR (Requirement).

4.2.3 Center Directors shall provide the logistic and resource support required for successful execution of Headquarters-led and Center-led SMSR activities (Requirement).

4.2.4 Center SMA Directors and Center Engineering Directors shall:

- a. Participate in the Headquarters-led SMSR process for each program/project applicable to their Center (Requirement).
- b. Direct the implementation of a Center-led SMSR process for reviews chaired below the Mission Directorate level in which the Center SMA organization is asked to concur/nonconcur (Requirement).
- c. Coordinate with program/project management and Center procurement organizations to ensure that contracts provide for adequate contractor support of Headquarters-led and Center-led SMSR activities (Requirement).
- d. Complete assigned SMSR actions within the established timeframe (Requirement).

4.2.5 The delegated SMA Technical Authority shall:

- a. Chair each Center-led SMSR (Requirement).
- b. Conduct a poll of selected SMSR participants at the conclusion of the SMSR for a recommendation to proceed (Requirement).
- c. Ensure that the basic elements of a Center-led SMSR, at a minimum, address the Headquarters-led SMSR elements and, to the extent possible, parallel Headquarters-led SMSR residual risk reporting formats (Requirement).
- d. Complete assigned SMSR actions within the established timeframe (Requirement).

4.2.6 Program/project managers shall:

- a. Provide the logistics and resources to support the preparation and conduct of Headquarters-led and Center-led SMSRs (Requirement).
- b. Ensure that program/project material presented at a SMSR is accurate and meets the specified needs of the SMSR (Requirement).
- c. Coordinate with Center SMA and Center procurement organizations to ensure that contracts provide for adequate contractor support of Headquarters-led and Center-led SMSR activities (Requirement).
- d. Complete assigned SMSR actions within the established timeframe (Requirement).

4.2.7 SMA and Engineering managers (including Chief Safety and Mission Assurance Officers (CSOs)) reporting (matrix or direct) to the program/project manager shall:

- a. Help to identify all independent organizations which have assessed portions of the program or project (Requirement).
- b. Provide material input for inclusion in SMSRs (Requirement).
- c. Compile the program/project SMSR material, including the program's assessment of residual safety and mission success risk related to the upcoming milestone, identifying risk consequence and likelihood with supporting rationale and uncertainty associated with estimated likelihood (Requirement).
- d. Coordinate the presentation of the Center and program/project SMSR material with the Chief, Safety and Mission

#### Assurance (Requirement).

- e. Coordinate within the program/project and support Headquarters-led and Center-led SMSR preparation meetings, as required (Requirement).
- f. Participate in SMSR polling as described in paragraphs 4.2.1.b and 4.2.5.b (Requirement).
- g. Complete assigned SMSR action items within the established timeframe (Requirement).

#### 4.2.8 Other independent assessment organizations (e.g., IV&V Facility, NESC, and Center-based independent assessment organizations) shall:

- a. Identify program/project assessments conducted by their respective organizations, summarize, and provide them to the OSMA SMSR Manager to ensure that the Chief, Safety and Mission Assurance has all relevant data at the SMSR and to avoid duplication of effort on the part of other independent assessment organizations (Requirement).
- b. Identify any issues or SMA residual risks related to their respective assessments (Requirement).
- c. Identify any areas where the findings of the independent assessments differ from the program/project assessment (Requirement).
- d. Participate, as applicable, in SMSR polling described in paragraph 4.2.1.b and 4.2.5.b (Requirement).
- e. Complete assigned SMSR action items within the established timeframe (Requirement).

#### 4.2.9 The OSMA SMSR Manager shall:

- a. Coordinate with the OSMA Mission Support Division, the Safety and Assurance Requirements Division, and Center-based SMA managers to identify which pending program and project events warrant a SMSR.
- b. Coordinate with the Chief Engineer's office, OSMA Mission Support Division and Safety and Assurance Requirements Division managers, NSC IPS audit managers, Center-based SMA managers, and independent assessment organizations (e.g., IV&V Facility, NESC, and other center based independent assessment organizations) to identify participants for a Headquarters-led SMSR (Requirement).
- c. Coordinate with the Chief Engineer's office, OSMA Mission Support Division and Safety and Assurance Requirements Division managers, Center-based SMA managers, and independent assessment organizations (e.g., IV&V Facility, NESC) to establish an appropriate integrated schedule for Headquarters-led and Center-led SMSRs and agenda for upcoming Headquarters-led SMSRs (Requirement).
- d. Coordinate with the program/project SMA and engineering managers to establish the team members for the SMSR polling group in coordination with the Chief, Safety and Mission Assurance and the Chief Engineer (Requirement).
- e. Maintain and update, based on operational experience, detailed SMSR process documentation and work instructions (Requirement).

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